Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte LINDA LIJUN ZHONG,
CONNIE CHUNLING LIU, SHAWN A. MAWIA,
JEFF DUANE ST. JOHN AND JEFFREY LEE PETREHN

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Appeal No. 2002-0932
Application No. 09/510,533

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ON BRIEF

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Before WALTZ, KRATZ, and PAWLIKOWSKI, **Administrative Patent Judges.**

WALTZ, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's final rejection of claims 1 through 9 and 11 through 19, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a method of manufacturing a magnetic recording medium which

includes a method of electrolessly plating a nodule-free, amorphous nickel-phosphorus (NiP) layer on a substrate surface (Brief, page 3).[1] Illustrative independent claim 1 is reproduced below:

> 1. A method of depositing a nodule-free, amorphous nickel-phosphorus (NiP) coating layer on a substrate surface by means of an electroless plating process, wherein an electroless plating bath utilized for depositing said coating layer is contained at an elevated temperature within a plating apparatus including at least one polymeric material, comprising performing said electroless plating in a plating apparatus wherein the at least one polymeric material is substantially resistant to degradation by contact with the elevated temperature electroless plating bath.

The examiner has relied upon the following references as evidence of obviousness:

Katz	3,348,969	Oct. 24, 1967
Malik et al. (Malik)	4,659,605	Apr. 21, 1987
Chen et al. (Chen)	5,733,370	Mar. 31, 1998
Chiu	6,153,802	Nov. 28, 2000 (filed May 08, 1998)

Claims 1, 3-4, 7-8, 11-13 and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chen in view of Katz (Answer, page 3). Claims 2, 14-16 and 18 stand rejected under

[1]All citations from the Brief refer to the Substitute Brief dated May 24, 2001, Paper No. 11.

35 U.S.C. § 103(a) as unpatentable over Chen in view of Katz and Malik (Answer, page 5). Claims 5-6 and 9 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chen in view of Katz and Chiu (*id.*). Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Chen in view of Katz, Malik and Chiu (Answer, page 6).

We *reverse* all of the examiner's rejections on appeal essentially for the reasons stated by appellants on pages 11-12 of the Brief and the reasons set forth below. Pursuant to the provisions of 37 CFR § 1.196(a), we also *remand* this application to the jurisdiction of the examiner for action consistent with our opinion below.

OPINION

The examiner finds that Chen discloses a method of fabricating a magnetic recording medium by electrolessly depositing an amorphous NiP seed layer on a substrate, with subsequent formation of the sequential layers of a polycrystalline underlayer, a magnetic recording layer, a protective overcoat layer, and a lubricant topcoat layer (Answer, page 3).

The examiner recognizes that Chen is silent with regard to any disclosure of the particular apparatus used in the electroless deposition of the NiP (Answer, page 4). The examiner concludes that it would have been obvious to use any conventional electroless plating equipment to form the electroless NiP layer on the substrate of Chen "with the expectation of achieving the desired results" (*id.*). The examiner applies Katz as support for this conclusion, finding that Katz discloses an electroless nickel deposition process where the plating bath is contained in equipment which is lined with Teflon (polytetrafluoroethylene) "such that the equipment is not coated by the nickel" with the formation of a uniform and smooth layer (*id.*). The examiner further finds that one skilled in the art of electroless plating would have recognized that "electroless nickel and electroless Ni-P plating process [sic] are chemically and functionally very similar and would be expected to behave similarly in the same environments" (*id.*). Based on these findings, the examiner further concludes that it would have been obvious to one skilled in the art to use the polytetrafluoroethylene coated electroless

plating vessel of Katz in the electroless NiP plating process of Chen, with the expectation of achieving the desired results of Chen and the additional benefit of preventing deposition on the plating equipment surfaces as shown by Katz (*id.*). We disagree.

As correctly argued by appellants (Brief, page 13), the examiner's contention that electroless nickel and electroless NiP plating processes are "chemically and functionally very similar" is not factually supported in the record before us. *See In re Lee,* 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002)("This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority."). Contrary to the examiner's contention (Answer, page 4), the environments are not the "same" but, as shown by appellants (Brief, paragraph bridging pages 11-12) and the art of record, NiP plating processes include a reducing agent such as the hypophosphite ion and deposit a NiP compound, not elemental nickel metal.

We note that the examiner discusses Zhong et al. (Zhong), U.S. Patent No. 6,106,927, issued Aug. 22, 2000 (filed Jul. 27, 1998), previously made of record, as evidence that electroless Ni

and NiP plating processes "behave similarly" and provide "similar results" (Answer, page 7). However, this reference was not listed in the "Prior Art of Record" (Answer, page 2, ¶(9)) and was not recited in the statement of the rejection (Answer, page 3). Furthermore, this reference has not been addressed by appellants (see the entire Brief) and only first discussed in the Answer in the examiner's "Response to Argument" (Answer, ¶(11)). Therefore we do not consider this reference as part of the examiner's evidence of obviousness. *See In re Hoch,* 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970)("Where a reference is relied on to support a rejection, whether or not in a minor capacity, there would appear to be no excuse for not positively including that reference in the statement of the rejection."); *Ex parte Raske,* 28 USPQ2d 1304, 1304-05 (Bd. Pat. App. & Int. 1993).

We additionally note that Katz teaches that a Teflon liner may be used for the plating bath vessel to keep the vessel from being coated with nickel during the plating process (col. 5, ll. 10-21). However, the examiner has not presented any convincing evidence or reasoning why one of ordinary skill in this art would

have used the Katz Teflon liner with NiP and its substrate in the Chen process, since the problem of deposition on the equipment depends on the induction period (see Katz, col. 4, l. 70-col. 5, l. 21), and the induction period for NiP is not found in this record. Additionally, we note that Chen teaches that with his NiP plating process no substantial modification of existing equipment is necessary (col. 4, ll. 18-28).

For the foregoing reasons and those stated in the Brief, we determine that the examiner has failed to establish a *prima facie* case of obviousness in view of Chen and Katz. The remaining secondary references to Malik and Chiu were cited to show limitations present in the dependent claims and fail to remedy the deficiencies discussed above (Answer, pages 5-6). Accordingly, we reverse all of the examiner's rejections under section 103(a) on appeal.

REMAND TO THE EXAMINER

We remand this application to the jurisdiction of the examiner for consideration of the following issues. As discussed above, Zhong has <u>not</u> been considered as part of the examiner's

evidence of obviousness in this appeal. Therefore, upon return of this application to the jurisdiction of the examiner, the examiner should consider Zhong, along with the evidence of record and any additional evidence, to determine if electroless Ni plating is equivalent to electroless NiP plating.

Additionally, the examiner should reconsider the scope of at least claims 1, 2, 11-14 and 19, since claim language during prosecution before the examiner should be construed as broadly as reasonably possible, as read in light of the specification and understood by one of ordinary skill in the art. *See In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). The above listed claims do not specify an apparatus including a fluorine-containing polymer but are generic to an apparatus including any polymeric material "substantially resistant to degradation by contact with the elevated temperature electroless plating bath" (e.g., see claim 1). These types of polymers are defined by appellants as ones which do not release "soluble, low molecular weight, carbon-containing species into the electroless plating bath, which species promote nodule

growth" (e.g., see claim 2 and the specification, page 6, ll. 3-7). However, it appears that appellants' admitted prior art, i.e., conventional polypropylene apparatus, meets these claimed limitations (specification, page 4, ll. 3-16; page 9, ll. 4-10; and Experiment 2 on page 11). With appellants' PVDF bolts, no abnormal nodules are observed (Figure 3; specification, pages 10-11). With "older" polypropylene fixtures, abnormal nodule growth is observed (Figures 5 and 6; specification, pages 11-12). With "relatively new" polypropylene fixtures (less than about six months plating usage), no abnormal nodule growth is observed, only "small and fine nodules" (Figure 4; specification, page 11). Accordingly, there is no evidence that "new" or "relatively new" polypropylene fixtures would release the 10 ppm or more of soluble, low molecular weight, carbon-containing species necessary for abnormal nodule formation (specification, page 13, ll. 5-15). Therefore the examiner should determine whether the use of conventional polypropylene fixtures, at the point in time when these fixtures are new, would meet the limitations of the claims.

This application, by virtue of its "special" status, requires an immediate action, *MPEP* § 708.01,(D).

REVERSED AND REMANDED

THOMAS A. WALTZ Administrative Patent Judge	)	
PETER F. KRATZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY A. PAWLIKOWSKI Administrative Patent Judge	)	

taw/vsh

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